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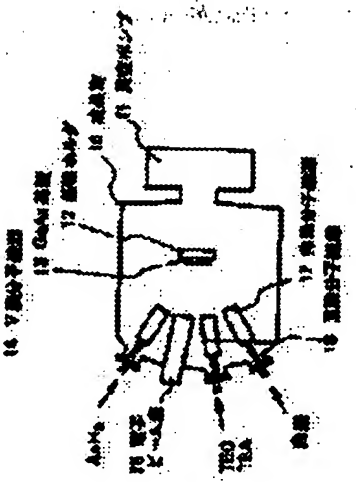
(54) EPITAXIAL GROWTH METHOD

(57)Abstract:
PURPOSE: To obtain an atomic layer epitaxial growth method capable of forming a selective growth layer having a minute local region less than or equal to 10nm and precision less than or equal to 0.1 μm.
CONSTITUTION: A GaAs substrate 13 is irradiated with an As beam from a group V molecular beam source 14 and triethyl aluminum TEA from a group Ⅲ molecular beam source 16, thereby forming an aluminum arsenide layer. Said layer is irradiated with fluorine particles from a fluorine molecular beam source 17, thereby forming an aluminum fluoride (AlF3) layer, which turns to a selective growth mask. A converged electron beam is projected from an electron beam source 15, fine lines are scanned, images are drawn, chemically adsorbed fluorine atoms are made to leave, and epitaxial growth is activated. After that, an As beam and triethyl gallium TEG molecules are irradiated, thereby growing a gallium arsenide layer only in the part subjected to image drawing by the electron beam.



LEGAL STATUS

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